

**Clean Copy of Amended Claims**

25 (amended). A monoclonal antibody or recombinant antibody fragment which binds a human gamma-carboxylated osteocalcin fragment, said monoclonal antibody or recombinant antibody fragment has the specificity to epitopes that have been identified on said gamma-carboxylated fragment of osteocalcin, said osteocalcin fragment selected from the group consisting of:

- i) a fragment which comprises amino acids 7-30 of the amino acid sequence set forth in SEQ ID NO:2 in which all three glutamic acids in positions 17, 21, and 24 of said sequence are gamma-carboxylated, and
- ii) a fragment which comprises amino acids 6-30 of the amino acid sequence of SEQ ID NO:2 in which all three glutamic acids in the positions 17, 21 and 24 of said sequence gamma-carboxylated.

26 (amended). A non-competitive immunoassay for quantitative determination of a gamma-carboxylated osteocalcin fragment comprising contacting a sample containing said osteocalcin fragment with two monoclonal antibodies or recombinant antibody fragments which bind said osteocalcin fragment, detecting bound monoclonal antibody or recombinant antibody fragments and correlating bound monoclonal antibody or recombinant antibody fragments with amount of osteocalcin fragment present, wherein said monoclonal antibody or recombinant antibody fragment has the specificity to epitopes that have been identified on said gamma-carboxylated fragment of osteocalcin, said osteocalcin fragment selected from the group consisting of

- i) a fragment which comprises amino acids 7-30 of the amino acid sequence set forth in SEQ ID NO:2 in which all three glutamic acids in positions 17, 21 and 24 of said sequence are gamma-carboxylated, and

ii) a fragment which comprises amino acids 6-30 of the amino acid sequence of SEQ ID NO:2 in which all three glutamic acids in the positions 17, 21 and 24 of said sequence are gamma-carboxylated.